

What is claimed is:

1. An anisotropic exchange spring magnet powder comprising:  
a hard magnetic material phase containing a rare earth metal  
element, a transition metal element, and at least one element  
5 selected from the group consisting of boron (B), carbon (C),  
nitrogen (N) and oxygen (O);

a soft magnetic material phase containing a transition metal  
element, and at least one element selected from the group  
consisting of boron (B), carbon (C), nitrogen (N) and oxygen  
10 (O), and wherein

said hard magnetic material phase and soft magnetic material  
phase have crystal particle diameters of 150 nm or less.

2. The anisotropic exchange spring magnet powder according  
to Claim 1, wherein the content of said rare earth metal element  
15 is from 2 to 15 atomic %, and the content of at least one element  
selected from the group consisting of boron (B), carbon (C),  
nitrogen (N) and oxygen (O) is from 1 to 25 atomic %.

3. The anisotropic exchange spring magnet powder according  
to Claim 1, wherein said rare earth metal element is at least  
20 one element selected from the group consisting of neodymium (Nd),  
praseodymium (Pr) and samarium (Sm).

4. The anisotropic exchange spring magnet powder according  
to Claim 1, wherein said transition metal element is composed  
mainly of iron (Fe) or (Co).

5. A method of producing an anisotropic exchange spring  
magnet powder comprising steps of:

preparing a crystalline mother material containing a hard  
magnetic material phase containing a rare earth metal element,  
a transition metal element, and at least one element selected  
30 from the group consisting of boron (B), carbon (C), nitrogen  
(N) and oxygen (O), and a soft magnetic material phase  
containing a transition metal element, and at least one element  
selected from the group consisting of boron (B), carbon (C),  
nitrogen (N) and oxygen (O), and/or, the crystalline mother  
35 material partially having amorphous parts;

amorphousating said crystalline mother material, and  
re-crystallizing said amorphousated mother material.

6. The method of producing an anisotropic exchange spring  
magnet powder according to Claim 5 wherein treatment is  
5 conducted by repeating a continuous process composed of said  
amorphousating process and crystallizing process, once or more  
times.

7. The method of producing an anisotropic exchange spring  
magnet powder according to Claim 5 wherein said crystalline  
10 mother material having amorphous parts has a content of  
amorphous parts obtained by temperature property of  
magnetization of 95% or less.

8. The method of producing an anisotropic exchange spring  
magnet powder according to Claim 5 wherein in said crystallizing  
15 process, anisotropy is imparted to the crystalline mother  
material amorphousated in said amorphousating process and the  
material is molded while solidifying.

9. The method of producing an anisotropic exchange spring  
magnet powder according to Claim 5 wherein said amorphousating  
20 process is conducted under a condition in which oxygen is  
blocked, in any of vacuum, an inert gas, nitrogen and an organic  
solvent.

10. The method of producing an anisotropic exchange spring  
magnet powder according to Claim 5 wherein said crystallizing  
25 process is conducted under a condition in which oxygen is  
blocked, in any of vacuum, an inert gas, nitrogen and an organic  
solvent.

11. The method of producing an anisotropic exchange spring  
magnet powder according to Claim 5 wherein said crystallizing  
30 process has a crystallization heating treatment temperature of  
950°C or less.

12. The method of producing an anisotropic exchange spring  
magnet powder according to Claim 5 wherein said crystallizing  
35 process has a crystallization heating treatment time of 1 hour  
or less.

13. An anisotropic exchange spring magnet obtained by treatment, in an anisotropy-imparting molding process and a solidification process, of an anisotropic exchange spring magnet powder comprising a hard magnetic material phase containing a rare earth metal element, a transition metal element, and at least one element selected from the group consisting of boron (B), carbon (C), nitrogen (N) and oxygen (O), and a soft magnetic material phase containing a transition metal element, and at least one element selected from the group consisting of boron (B), carbon (C), nitrogen (N) and oxygen (O), wherein said hard magnetic material phase and soft magnetic material phase have crystal particle diameters of 150 nm or less.